Information Management and Business Review (ISSN 2220-3796)
Vol. 18, No. 3, pp. 95-106, 2026

Redefining Human Capital Sustainability: An Integrative Conceptual Framework Harmonizing ISO 45003 and the Job Demands-Resources Model for Psychosocial Risk Assessment

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Abstract: Although Corporate Social Sustainability programs have matured and Environmental, Social, and Governance (ESG) frameworks have become institutionalized, organizations remain structurally under-prepared for the rising incidence of workplace burnout worldwide. This conceptual paper addresses a silo that has lingered at the intersection of Occupational Safety and Health (OSH) scholarship on one side and corporate sustainability reporting on the other: the absence of a defensible theoretical bridge between micro-level psychosocial risk management and macro-level human capital outcomes. We align the structural hazard taxonomy codified in ISO 45003 (International Organization for Standardization, 2021) with the dual-pathway psychological mechanics of the Job Demands–Resources(JD-R) model (Demerouti et al., 2001) and assemble a streamlined conceptual framework that treats systematic Psychosocial Risk Assessment (PRA) as the operational engine connecting structural hazard controls to quantifiable social sustainability indicators. Adjacent constructs drawn from Psychosocial Safety Climate (PSC), Effort–Reward Imbalance (ERI), Conservation of Resources (COR) theory, and the recovery-experiences literature are integrated into a single causal architecture anchored by a Core Proposition suitable as an entry-point hypothesis for new investigations. The contribution advances the JD-R model into the regulatory and corporate-governance vocabulary, and it extends ESG Social measurement beyond lagging demographic indicators toward leading, auditable risk scores. The framework is intended to function both as theoretical scaffolding for occupational health psychology researchers and as a strategic roadmap for chief human resource officers, boards, sustainability committees, and investor analysts.

Keywords: *Psychosocial risk, ISO 45003, Job Demands–Resources Model, Environmental, Social and Governance, human capital, social sustainability, burnout, Psychosocial Safety Climate, technostress, recovery experiences.*

1. Introduction

Modern corporations have spent decades refining algorithmic frameworks that protect physical capital and optimize financial assets. They have done far less for the resource that is simultaneously their most valuable and most exhaustible: human capital. Chronic occupational exhaustion — reclassified by the World Health Organization (WHO) in the 11th Revision of the International Classification of Diseases (ICD-11) as an occupational phenomenon rooted in chronic workplace stress that has not been successfully managed (World Health Organization, 2019) — has migrated from an individual psychological vulnerability into an institutional hazard whose financial consequences (voluntary turnover, absenteeism, presenteeism and elevated health-insurance claims) now hit the corporate balance sheet directly.

Recent regulatory moves have begun to shift the institutional response. The publication of ISO 45003 (International Organization for Standardization, 2021) marks a watershed moment in global corporate governance: psychosocial hazards-unmanageable workload velocity, role ambiguity, availability creep, interpersonal conflict, and inadequate managerial support are now formally elevated to the same operational and legal standing as physical, chemical, or ergonomic risks. By standardizing the conduct of Psychosocial Risk Assessments (PRAs) and demanding structural redesign of the work environment, ISO 45003 removes much of the ambiguity that previously allowed managers to treat chronic strain as a private, non-auditable matter. The standard sits squarely within the management-system architecture already established by ISO 45001.

A persistent disconnection remains, however. Occupational Safety and Health (OSH) scholarship continues to treat psychosocial risk as a localized compliance task managed by human resources or safety functions.

Corporate sustainability literature, by contrast, evaluates the "Social" pillar of Environmental, Social, and Governance (ESG) reporting through lagging, demographic-style indicators diversity ratios, headcounts, aggregated injury-frequency data that are detached from the everyday operational stress profiles of the workforce (Bautista-Bernal et al., 2021). The two literatures share the construct of "worker well-being" but communicate through incompatible measurement vocabularies. There is, accordingly, a clear theoretical and operational demand for an integrative framework that connects the micro-dynamics of daily psychosocial risk exposure with the macro-imperative of corporate human sustainability.

The paper develops such a framework. Drawing upon the dual-pathway psychology of the Job Demands–Resources (JD-R) model (Bakker & Demerouti, 2016; Demerouti et al., 2001), the upstream organizational climate literature on Psychosocial Safety Climate (PSC) (Dollard & Bakker, 2009; Dollard & McTernan, 2011), the social-exchange conceptualization of Effort–Reward Imbalance (ERI) (Siegrist, 1996, 2010), the motivational stress logic of Conservation of Resources (COR) theory (Bon & Shire, 2022; Liao et al., 2021), the recovery-experiences tradition (Fritz et al., 2010; Sonnentag & Fritz, 2007), and the empirical body of technostress research (Tarafdar et al., 2007, 2010), we propose a structural intervention model in which ISO 45003-aligned PRAs function as the upstream lever that simultaneously dampens the health-impairment pathway and reinforces the motivational pathway of the JD-R model, thereby driving macro-level human-capital sustainability outcomes.

Three central objectives structure the remainder of this paper. First, we map the conceptual contribution against the existing psychosocial-risk and sustainability literature. Second, we synthesize the JD-R model with adjacent psychosocial frameworks, operationalize ISO 45003 as an audit-ready taxonomy for the social pillar of ESG disclosure, and assemble these inputs into a single parsimonious theoretical framework anchored by a Core Proposition. Third, we position the framework against broader implementation and methodological opportunities that will guide future empirical work.

2. Literature Review and Positioning of the Contribution

Bibliometric and Theoretical Positioning

Bibliometric evidence points to a sizeable but fragmented intersection between Occupational Safety and Health (OSH) management research and the social-responsibility/sustainability literature (Bautista-Bernal et al., 2021). The transition from OHSAS 18001 to ISO 45001 produced smooth organizational handovers in many firms, but the incorporation of psychosocial risk into the OSH management system has lagged partly because of the absence of a structured, risk-based language equivalent to the "hazard–exposure–control" vocabulary that physical-safety practitioners take for granted. Recent scholarship confirms that the lack of competent personnel, employee fear of disclosure, and methodological unfamiliarity constitute the principal barriers to systematic psychosocial-risk management under ISO 45003 (Wierzowiecka, 2022), and practitioners continue to call for management-system architecture that explicitly incorporates well-being alongside traditional safety (Boyle & Charlton, 2024).

Within occupational health psychology, the JD-R model is the most widely cited theoretical framework for understanding occupational strain (Bakker & Demerouti, 2007; Demerouti et al., 2001). Its empirical reach has been extended in several directions: personal resources (Bakker et al., 2022), multilevel and proactive behavior extensions (Bakker et al., 2022), and recovery-experience mediators (Kinnunen et al., 2011). PSC literature has pushed JD-R upward, identifying senior management values as the upstream antecedent of workplace demands and resources (Dollard & Bakker, 2009; Dollard & McTernan, 2011; Mansour & Tremblay, 2019). ERI literature has verified the cardiovascular and mental-health consequences of perceived imbalance between effort and reward (Backé et al., 2011; Fishta & Backé, 2015; Siegrist, 1996, 2010). COR has supplied the motivational-stress scaffolding that explains why resource loss dominates resource gain in determining strain (Becker et al., 2019; Bon & Shire, 2022; Liao et al., 2021). The technological transition has produced an independent strand of research on technostress, whose creators (techno-overload, techno-invasion, techno-complexity, techno-uncertainty, techno-insecurity) are now empirically documented as predictors of role stress, exhaustion, and reduced ICT-mediated productivity (Tarafdar et al., 2007, 2010, 2014). The recovery-experiences tradition, lastly, has shown that psychological detachment, relaxation, mastery, and control during off-work time act as restorative mechanisms that moderate the transition from demands to strain (Fritz et al., 2010; Kinnunen et

al., 2011; Sonnentag & Fritz, 2007).

What the reviewed literature lacks is an integrative cross-walk between ISO 45003 and these traditions. The present paper responds to that gap.

Theoretical Contribution Statement
Three advances distinguish this paper from prior work. First, to the authors' knowledge, it offers the first systematic alignment of the JD-R model with the ISO 45003 three-domain structure, grounding the integrated framework in the dual-pathway psychology articulated by Demerouti et al. (2001) and Bakker and Demerouti (2016). Second, it explicitly integrates PSC, ERI, COR, and recovery-experiences theory as compatible rather than competing lenses through which to interpret the framework's buffering logic. Third, it formalizes the bridge to ESG Social indicator auditing, treating PRA scores as prospective leading indicators rather than retrospective compliance artefacts.

Theoretical Background

The Core Mechanics of the JD-R Model
The JD-R model posits that, irrespective of industry or occupation, every occupational characteristic can be sorted into one of two overarching categories: Job Demands and Job Resources (Bakker & Demerouti, 2007; Demerouti et al., 2001).

Job Demands are those physical, psychological, social, or organizational aspects of the job that require sustained physical and/or psychological effort and that carry corresponding physiological and psychological costs, such as chronic fatigue and cognitive exhaustion. The demands divide into quantitative forms, such as workload and time pressure, and qualitative forms, such as role conflict and emotional dissonance. When recovery opportunities are inadequate, the same regenerative resource pool is taxed repeatedly rather than replenished, and adverse effects accumulate across both the working week and the longer working life.

Job Resources are those physical, psychological, social, or organizational aspects of the job that are functional for achieving work goals, for reducing job demands and their associated physiological costs, or for stimulating personal growth, learning, and development. They divide into operational resources such as tools and training, which enable a task to be completed with less wasted effort; relational resources such as supervisor support and team cohesion, which provide the interpersonal scaffolding on which task work rests; and organisational resources such as procedural justice and career prospects, which shape the procedural and developmental conditions under which work takes place (Bakker & Demerouti, 2016; Demerouti et al., 2001).

The interaction of Job Demands and Job Resources initiates two distinct psychological pathways that determine workforce sustainability: the health-impairment pathway and the motivational pathway (Bakker & Demerouti, 2016; Demerouti et al., 2001). On the health-impairment pathway, chronic and unrecovered demand exposure drains available energy and erodes cognitive and physiological reserve. Where resources are insufficient to buffer it, the trajectory continues to clinical burnout, psychosomatic illness, and, at the limit, organisational exit. On the motivational pathway, robust resources foster engagement, intrinsic motivation, and organisational commitment by satisfying the basic psychological needs of autonomy, competence, and relatedness. They also buffer the conversion of demands into strain, so that the cumulative depletion on which the first pathway depends is materially reduced.

The Buffering Hypothesis
Bakker et al. (2004) reported that the buffering hypothesis is not universally supported empirically; their performance-outcome test found strong support for the direct routes but not for the demand × resource interaction on exhaustion. That honesty matters for the framework developed here: the resource-buffering strand is therefore specified as a moderated relationship whose magnitude, rather than direction, is the target of empirical test. Buffering should be expected more reliably when resources are operationalized at the structural rather than individual level and particularly where the resources activate recovery experiences.

Personal Resources

Bakker et al. (2022) emphasize the person × situation dynamic and the integration of personal resources (optimism, self-efficacy, resilience) with job resources. Personal resources parallel job resources in motivational function; they operate in tandem with, but do not substitute for, structural job resources. For organizational-level analysis — the natural unit of ISO 45003-PRA — the actionable variables remain the job-level resources; personal resources enter the framework as covariates or boundary conditioners rather than primary levers.

Gain and Loss Spirals

COR theory's first principles — primacy of resource loss, loss and gain spirals, and resource caravans (Bon and Shire, 2022; Liao et al., 2021) — supply the dynamic logic explaining why chronic demand exposure escalates disproportionally. A worker who enters a high-demand week with a depleted resource caravan spirals quickly into exhaustion; a worker with a robust caravan absorbs the same demand with greater resilience. The implication for ISO 45003-PRA design is that structural interventions targeting resources are most consequential when they replenish depleted caravans rather than merely provision marginal increments to already-buffered workers.

The Engagement–Burnout Continuum

Schaufeli and Bakker (2004) applied multi-sample structural equation modelling (N = 1698) and showed that burnout is principally predicted by job demands but also by a shortage of job resources, while engagement is predicted only by the resources actually available. Bakker et al. (2014) consolidated this finding into a dual-process model in which burnout and engagement sit as antithetical but not perfectly inverse; across typical samples the two poles share between 10 and 25 per cent of their variance. The practical consequence is that any structural control which reduces exhaustion also feeds the motivational pathway in parallel, so the two processes cannot be managed sequentially as if they were independent.

Burnout, the WHO ICD-11 Framing, and the Engagement Continuum

Burnout has migrated from a clinically debatable construct to an internationally codified occupational phenomenon under the World Health Organization (WHO) ICD-11 framework (World Health Organization,2019), but the codification has not displaced the consensus measurement architecture. The Maslach Burnout Inventory – General Survey (MBI-GS) remains the canonical instrument, organised around the three dimensions of exhaustion, cynicism, and professional efficacy. Schaufeli (2017) traces how JD-R research has, in parallel, validated the Utrecht Work Engagement Scale (UWES) as the canonical metric for the motivational counterpart. MBI-GS is consequently retained for health-impairment-pathway outcomes and UWES for motivational-pathway outcomes, on the principle that each instrument pairs with the outcome it was theoretically designed to detect.

Adjacent Psychosocial Frameworks

Job Demands–Control Tradition

The earlier Job Demands–Control (JF-C) family and its Job Demands–Control–Support (JD-C-S) extension constitute JD-R's conceptual parentage. Bakker and Demerouti (2007) explicitly position JD-R as the more flexible descendant, capable of integrating occupational features that the binary control dimension in the JD-C lineage could not accommodate. ISO 45003 Domain 1, which addresses work organisation including control and autonomy, is directly congruent with the JD-Control axis; ISO 45003 Domain 2, which addresses social factors, carries forward the JD-C-S support dimension. For senior management accustomed to the older vocabulary, JD-C and JD-C-S supply the historical legitimacy and intelligibility on which JD-R sits as the integrative umbrella.

The Effort–Reward Imbalance (ERI) Model

ERI focuses on the reciprocity contract between sustained effort and the rewards received in return, distinguishing three reward dimensions: money, esteem, and promotion/security (Siegrist, 1996). The cardiovascular and mental-health consequences of imbalance are now well established across systematic reviews (Backé et al., 2011; Fishta & Backé, 2015), and Siegrist (2010) further consolidated the empirical base. Kivimäki et al. (2007) examined whether ERI is redundant with procedural and relational injustice and found the constructs complementary rather than substitutable. For the present framework, ERI maps most naturally

onto ISO 45003 Domain 1 (under-reward signalling) and Domain 2 (procedural/relational justice dimensions). ERI's call for "intervention studies guided by this theoretical approach" (Siegrist, 2010) is precisely what ISO 45003 institutionalizes when adopted as a structural control mechanism.

Conservation of Resources (COR) Theory

COR theory positions resource loss as the primary engine of stress; resource gain assumes a secondary, less weighted role (Bon & Shire, 2022; Liao et al., 2021). For ISO 45003-aligned PRA, COR supplies the cumulative-erosion logic: each successive PRA cycle that identifies an unresolved resource deficit (low control, low support, persistent tech-friction) represents a marginal depletion of the organizational resource caravan. Becker et al. (2019) extend COR to ICT and email-monitoring expectations, finding that prolonged resource loss through attention depletion rapidly erodes well-being and bleeds into significant-other relationships — a particularly salient boundary condition for hybrid and remote workforces.

Psychosocial Safety Climate (PSC)

PSC refers to shared perceptions of organizational policies, practices, and procedures for the protection of worker psychological health and safety (Dollard & Bakker, 2010). Empirically, PSC operates as an upstream precursor of job-level demands and resources: senior-management values determine whether workers experience workload compression or workload regulation. Hall et al. (2010) developed the PSC-12 instrument with four sub-scales; Dollard and McTernan (2011) extended the model across multiple levels of analysis and documented the role of sector-level policy environments; Mansour and Tremblay (2019) demonstrated PSC's downstream impact on burnout and safety-workaround behavior in healthcare. For ISO 45003-aligned PRA, PSC functions as a domain-level antecedent: Domain 2 (managerial support, communication, voice) is the operational residue of a high-PSC organization, while a low-PSC organization will generate structural hazards faster than any combination of secondary-tier wellness interventions can absorb.

Recovery Experiences: A Missing Bridge in the Buffering Logic

The buffering hypothesis of the JD-R model rests on the assumption that resources either bracket demands cognitively or provide operational slack. The recovery-experiences tradition supplies a complementary mechanism: actions and mental states during off-job time that replenish depleted resources. Sonnentag and Fritz (2007) developed the Recovery Experience Questionnaire, measuring four dimensions: psychological detachment from work, relaxation, mastery, and control. Fritz et al. (2010) demonstrated that each recovery experience has a distinct and measurable association with affective states and exhaustion indicators; Kinnunen et al. (2011) tested recovery experiences as mediators in JD-R structural models and confirmed their theoretical and empirical explanatory value. The present framework proposes that buffers operate most reliably when workers can actually convert structural Domain 1 (control/autonomy) and Domain 2 (psychological safety) resources into recovery experiences during off-job time — a specification that strengthens the moderation claim by supplying a mechanism beyond mere statistical interaction.

Leadership Behaviors and the Social Domain

ISO 45003 Domain 2 explicitly incorporates leadership behaviors as part of the social climate. The transformational leadership tradition provides the most empirically supported case for the resource-amplification function of leadership behaviors, while servant leadership models extend the ethical-climate dimension under which PSC operates. Abusive supervision — the systematic expression of hostility by a manager toward subordinates — has been documented in the Organizational Behavior (OB) literature as a strong destructive demand. The paper does not generate new empirical results on leadership, but the framework should be read as embedding the proposition that MBI-GS trajectories will track the leadership construct layer of ISO 45003 Domain 2 directly, with service-sector and knowledge-work populations most acutely sensitive.

Cross-Cultural Validity of PRA Instruments

The cross-cultural validity of underlying PRA instruments is a substantive constraint on the generalizability of the framework. The Copenhagen Psychosocial Questionnaire (COPSOQ) family originated in Scandinavia and has been translated into more than twenty languages with documented reliability and factor-structure comparability (Schaufeli, 2017); the Health and Safety Executive (HSE) Management Standards Indicator Tool has been validated in British, Australian, and several European administrations (Bautista-Bernal et al., 2021);

MBI-GS and UWES have been translated and validated in dozens of languages with replicated factor structures; and PSC-12 has been validated across multi-occupational samples (Hall et al., 2010). Yet instrument equivalence in collectivist versus individualist cultural contexts, and across high-power-distance versus low-power-distance organizational hierarchies, remains unresolved at the metric level. The framework should therefore be deployed, where feasible, with parallel-form or back-translation protocols and with multi-group confirmatory factor analyses before drawing cross-jurisdictional inferences. This caveat is revisited in the Limitations section.

3. ISO 45003 as an Operational Taxonomy for the JD-R Model

The Three-Domain Structure

The JD-R model offers a robust diagnostic explanation of how burnout occurs, but it remains a relatively abstract framework that does not explicitly categorize the modern structural hazards an organization must audit. ISO 45003 (International Organization for Standardization, 2021) fills this void with a three-domain operational taxonomy that maps cleanly onto the demands–resources binary.

Table 1: Mapping of the ISO 45003 three-domain hazard taxonomy to the Job Demands–Resources binary

Domain	Demands	Resources
Domain 1: Work Organization	• Workload velocity • Role ambiguity • Lack of task control	• Job Control & Autonomy
Domain 2: Social Factors	• Low supervisor support • Toxic team dynamics • Workplace bullying	• Managerial support • Psychological safety • Transparent communication
Domain 3: Work Environment, Equipment & Conditions	• Availability creep • Tool friction • Ergonomic exposure	• Ergonomics • Usable interface • Digital-environment design

Domain 1 — How Work is Organized. ISO 45003 explicitly identifies workload velocity, role ambiguity, and lack of task control as primary psychosocial hazards. In JD-R vocabulary, workload velocity and role ambiguity are severe, energy-depleting job demands; the Domain 1 focus on task control is the operational supply side of a structural job resource. When an organization uses a PRA to optimize job design — for instance, by increasing worker autonomy, Domain 1 resource supply rises, structurally injecting a buffer that dampens the health-impairment pathway.

Domain 2 — Social Factors at Work. This domain covers interpersonal relationships, managerial support, and organizational culture. Within JD-R, low supervisor support, toxic team dynamics, and workplace bullying constitute destructive psychological demands; a workplace characterized by psychological safety and transparent communication supplies a high-value job resource. PRA evaluation of these social dynamics effectively audits the structural strength of an organization's motivational pathway.

Domain 3 — Work Environment, Equipment and Conditions. ISO 45003 addresses the physical and digital interfaces of labor: fragmented software systems, poor ergonomics, isolated remote work environments, and equipment-imposed pacing. In digitalized corporate environments, tech fatigue and constant availability expectations represent an evolved demand category that accelerates cognitive exhaustion. Domain 3 has, until recently, been under-instrumented in OH&S practice; the integrative framework's bridging logic addresses precisely this omission.

Integration with the ISO 45001 Management System

ISO 45003 is explicitly designed to operate within the management-system architecture established by ISO 45001 (Boyle & Charlton, 2024). Where ISO 45001 specifies the management-system plumbing (context of the organization, leadership and worker participation, planning, support, operation, performance evaluation, and improvement), ISO 45003 supplies the content of psychosocial-risk management that the management system must conduct (Boyle & Charlton, 2024; Wierzowiecka, 2022). A mature ISO 45001-compliant system can

integrate ISO 45003 without rebuilding its audit cycle; an organization lacking ISO 45001 maturity will need to lift its general systems discipline before PRA scores can be evidenced as audit-grade indicators.

Table 2: Procedural templates for Psychosocial Risk Assessment under ISO 45003: comparative orientation, empirical evidence, and principal contribution

Procedural Template	Methodological Orientation	Field Context & Empirical Evidence	Principal Contribution
Borodina et al. (2023)	Bowtie-based hazard decomposition; eight-step procedure (preparation → data collection → analysis → preventive-measure design → verification)	Ukrainian industrial enterprises; documented procedure design and post-intervention verification protocol	Hazard → consequence → control decomposition logic; explicit feedback loop from individual health assessments to structural intervention
Wierzowiecka (2022)	Barrier diagnosis in mature ISO 45001-compliant systems	Polish OH&S management literature; expert review of barriers encountered during psychosocial-risk integration	Taxonomy of implementation barriers: lack of competent personnel, fear of disclosure, methodological unfamiliarity
Nebbs et al. (2025)	Hybrid method pairing dedicated implementation teams with a facilitated planning process (adapted from health-guideline implementation science)	Six regional Australian organizations; 29 semi-structured interviews at two time points; three emergent themes	First peer-reviewed empirical demonstration of cross-site ISO 45003 feasibility; produced tailored implementation plans

Procedural Operationalization of PRA

Three procedural templates now exist in the published literature through which ISO 45003-PRA can move from specification to reproducible practice. Borodina et al. (2023) describe a Bowtie-based procedure for industrial enterprises in which preparation, data collection, and analysis are conducted against a structured hazard inventory, with explicit feedback from individual health assessments feeding into preventive-measure design; the procedure operates with eight core steps culminating in post-intervention verification. Wierzowiecka (2022) writing from a mature OSH system perspective, supplies the complementary implementation-barrier diagnosis — lack of competent personnel, employee fear of disclosure, and methodological unfamiliarity — that any adopter must navigate. Nebbs et al. (2025) add what the other two sources do not yet provide: empirical feasibility evidence. Across six regional Australian organizations, their hybrid method — implementation teams combined with a facilitated planning process adapted from health-guideline implementation — produced tailored, evidence-informed implementation plans at every site despite organizational variation. Triangulating industrial Bowtie decomposition (Borodina et al., 2023), barrier diagnosis in mature OSH systems (Wierzowiecka, 2022), and team-based facilitated implementation in six surveyed sites (Nebbs et al., 2025) establishes that ISO 45003 can be operationalized across diverse contexts, and supplies the empirical anchor for the audit-grade assumption that underwrites the Core Proposition advanced in Section 4.

From PRA to ESG: Closing the Social Measurement Gap

The "Social" component of ESG disclosure has historically relied on lagging, descriptive indicators: gender split, nationalities represented, lost-time injury frequency rates, voluntary turnover statistics gathered after the separations have occurred. Prior literature establishes that high-sustainability firms exhibit distinct governance and performance characteristics, and existing scholarship documents that ESG-oriented investing can produce measurable financial returns. These findings reinforce the strategic importance of the Social pillar, but neither furnishes a leading operational indicator of the Social pillar's underlying quality. Existing

scholarship further reports that credible Social performance metrics are predictive of subsequent financial outcomes — yet the operational indicators remain detached from the day-to-day operational stress profile of the workforce.

ISO 45003 changes the calculus. The standard does for psychosocial stress what OHSAS 18001/ISO 45001 did for physical safety: it specifies a standardized, repeatable, auditable assessment process with explicit hazard taxonomy, control hierarchy, and verification cycle. The risk score that emerges from a properly conducted PRA is a leading indicator, available in near-real time and longitudinally across repeated audit cycles, with a defensible theoretical pathway [anchored by the Core Proposition advanced in Section 6] to the lagging indicators on which current Social disclosure depends. PRA-augmented Social reporting therefore has the potential to convert ESG Social metrics from backward-looking catalogues into forward-looking risk dashboards. Whether investor-grade disclosure frameworks (Global Reporting Initiative [GRI], Sustainability Accounting Standards Board [SASB], European Sustainability Reporting Standards [ESRS S1] under the Corporate Sustainability Reporting Directive [CSRD]) can absorb audited PRA scores is a foreseeable integration question; the framework advanced here provides the theoretical justification.

4. Towards an Integrated Theoretical Framework

The Core Thesis

Sections 2 and 3 have prepared the conceptual groundwork. The thesis is that an organisation conducting systematic, ISO 45003-aligned Psychosocial Risk Assessments and acting on its findings through structural workplace changes will simultaneously reduce chronic workforce strain along the JD-R health-impairment pathway and reinforce engagement, autonomy, and retention along the JD-R motivational pathway. The behavioural and clinical signals carried along these two pathways include burnout scores from the health-impairment pathway, engagement levels from the motivational pathway, and voluntary turnover, absenteeism, and elevated health-care utilisation cutting across both. Mainstream ESG reporting frameworks can then absorb these signals as a leading, audit-grade input to the "Social" pillar of corporate ESG reporting, replacing lagging demographic counts with prospective risk indicators.

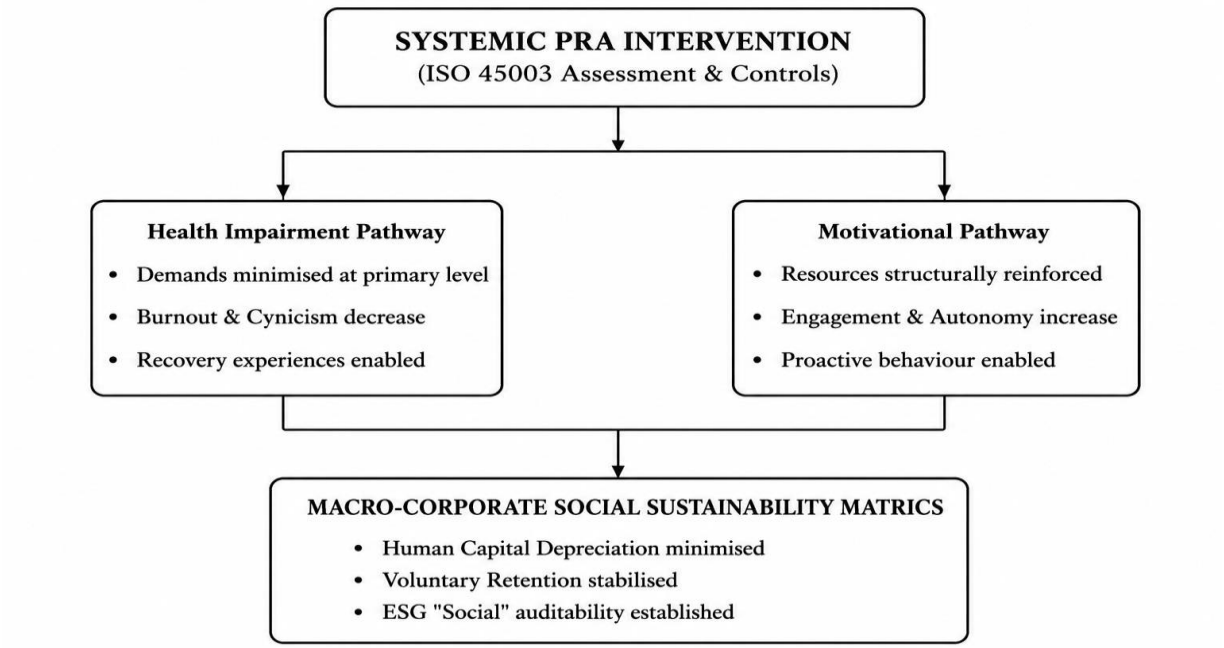
The thesis rests on three conceptual moves. First, ISO 45003's three domains supply the operational taxonomy: a structured vocabulary for the psychosocial hazards that the JD-R model otherwise treats abstractly. Second, the JD-R dual-pathway structure supplies the psychological mechanism by which hazard reduction produces distinct clinical and motivational outcomes in the workforce (Bakker et al., 2014; Bakker & Demerouti, 2016; Demerouti et al., 2001; Schaufeli & Bakker, 2004). Third, PRA outputs supply the corporate-accounting layer: auditable signals of the Social pillar's underlying quality that mainstream ESG disclosure frameworks are positioned to absorb.

The novelty of the framework lies in this explicit integration. The JD-R model, the ISO 45003 taxonomy, and the JD-R × ESG bridging logic have each been developed in their own literatures, but the three have not previously been combined into a single defensible theoretical architecture connecting micro-level hazard exposure with macro-level corporate human-capital accounting.

Conceptual Flow Diagram

The integrated logic is summarized visually below. A system-wide PRA acts upstream on both JD-R pathways; the pathways converge on macro-level corporate sustainability outcomes that current ESG Social reporting seeks, but is currently poorly equipped to capture.

Figure 1. The integrated framework: ISO 45003-aligned Psychosocial Risk Assessment as the upstream structural lever converging on macro-corporate social sustainability outcomes.



Reading Figure 1 from the top, ISO 45003-aligned PRA is positioned as the upstream structural lever (International Organization for Standardization, 2021). On the left, the health-impairment pathway is dampened: demands are minimized at the primary level, burnout and cynicism decrease, and recovery experiences become available to support depleted workers (Demerouti et al., 2001; Sonnentag & Fritz, 2007). On the right, the motivational pathway is reinforced: resources are provided structurally, engagement and autonomy rise, and proactive behavior is enabled (Bakker et al., 2014; Schaufeli & Bakker, 2004). Both pathways feed the bottom box — macro-corporate social sustainability metrics — where human capital depreciation is minimized, voluntary retention stabilizes, and ESG "Social" auditability is established.

Core Proposition

For readers new to this area, the framework can be condensed into a single Core Proposition that captures the central causal claim and provides an entry-point hypothesis for empirical investigation:

Core Proposition (P). *Organisations that implement systematic Psychosocial Risk Assessment anchored in ISO 45003 as a primary, structural intervention will exhibit measurable reductions in chronic workforce strain via the JD-R health-impairment pathway, simultaneous strengthening of engagement and retention via the motivational pathway, and consequently generate a leading, audit-grade input to the "Social" component of corporate sustainability reporting. Contemporary lagging demographic indicators cannot perform this leading, audit-grade input function.*

The Core Proposition integrates the theoretical claims developed across psychosocial safety climate (Dollard & Bakker, 2009; Dollard & McTernan, 2011), effort–reward imbalance (Siegrist, 1996, 2010), conservation of resources (Bon & Shire, 2022; Liao et al., 2021), and the recovery experiences tradition (Fritz et al., 2010; Kinnunen et al., 2011; Sonnentag & Fritz, 2007). Within the JD-R model, these four frameworks sit as compatible rather than competing lenses. A companion research-methods document contains the construct-level measurement guidance by which the Core Proposition can be operationalised, together with the sub-propositions interrogating each component strand empirically.

Contributions to Knowledge

The paper advances knowledge in four distinct ways. First, it provides the first explicit conceptual synthesis of the JD-R model and ISO 45003 in the published literature, bridging a compartmentalization that has

constrained both management and occupational-health psychology scholarship (Bautista-Bernal et al., 2021). Second, it reformulates PRA — conventionally understood as an HR compliance task — as a structured intervention variable capable of being positioned within causal models of corporate sustainability outcomes. Third, it advances the operationalization of ESG Social indicators by proposing PRA-augmented scoring as a leading metric superior to legacy lagging indicators. Fourth, it articulates PSC, ERI, COR, recovery experiences, and leadership behavior as compatible rather than competing lenses within a single framework, supplying theoretical humility about buffering conditions and specifying recovery experiences as a missing transfer mechanism.

5. Conclusion and Limitations

Limitations

Four structural limitations warrant explicit acknowledgement. First, the framework assumes that firms will adopt ISO 45003 in ways that produce substantive, evidence-informed risk profiles rather than box-ticking compliance artefacts. Although recent empirical work has demonstrated that deliberate implementation scaffolding achieves real-world adoption across diverse organizational contexts (Nebbs et al., 2025), the boundary conditions of that effect — particularly under conditions of regulatory capture, weak enforcement infrastructure, or thin internal audit capacity — remain uncharacterized. The Core Proposition's predictive validity will accordingly attenuate wherever PRA scoring diverges from the procedural integrity assumed here, and the framework should not be read as a guarantee of faithful adoption.

Second, the framework assumes cultural and labor-market contexts in which workers can plausibly act on the buffer resources that the JD-R model anticipates; its transportability into gig economies, informal-sector workplaces, and under-resourced healthcare systems — including those recently studied for sector-specific PSC dynamics (Mansour & Tremblay, 2019) — requires separate theoretical treatment.

Third, the framework does not specify the temporal lag structure between PRA intervention and downstream sustainability outcomes. This is, in part, a deliberate theoretical humility: the temporal profile is plausibly sector-dependent (longer in healthcare, shorter in knowledge work), and a single specified lag across sectors would misrepresent the underlying dynamics. The temporal choice is therefore left to empirical researchers rather than offered as a definitive theoretical prediction.

Fourth, reverse causality remains a methodological concern. It is empirically plausible that organizations experiencing high visible strain are *more* likely to initiate PRA — generating an observational correlation that runs in the opposite direction to the Core Proposition. Quasi-experimental designs alone cannot fully eliminate this confound; difference-in-differences, instrumental-variable approaches, and the natural-experiment opportunities created by staged national implementation of ISO 45003 (Nebbs et al., 2025) offer partial mitigation but do not constitute a definitive solution.

The buffering hypothesis itself is not universally supported empirically (Bakker et al., 2004); the resource-buffering strand of the framework should accordingly be interpreted as a magnitude claim whose detection requires structural rather than purely statistical specification. Cross-cultural instrument equivalence is also unresolved at the metric level (Section 3.6); comparative empirical work across collectivist–individualist and high–low power-distance contexts requires multi-group CFA before cross-jurisdictional inferences can be drawn (Bautista-Bernal et al., 2021; Dollard & McTernan, 2011).

Conclusion

The current corporate approach to employee burnout and social sustainability is fundamentally broken because it treats an organizational design flaw as an individual character flaw. By synthesizing the rigorous structural guidelines of ISO 45003 (International Organization for Standardization, 2021) with the validated dual-pathway psychological dynamics of the Job Demands–Resources model and by integrating that synthesis with PSC, ERI, COR, recovery experiences, the technostress tradition, and the ISO 45001 management-system architecture — this conceptual paper offers a corrective path forward. The Core Proposition advanced in Section 6 supplies an accessible entry-point hypothesis for newcomers to the area: systematic, ISO 45003-anchored Psychosocial Risk Assessment functions simultaneously as the structural lever that dampens

workforce strain, activates the motivational pathway, and produces an audit-grade leading input to the Social pillar of corporate sustainability reporting.

True human capital sustainability cannot be achieved through reactive, peripheral wellness strategies. It requires a fundamental shift toward primary prevention, treating psychosocial hazards with the same systematic, auditable accountability that has defined physical safety for over a century. Only when organizations treat the mental and emotional reserves of their workforce as a finite, protectable asset will corporate social sustainability transition from a marketing metric into an operational reality.

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